Decimal Fractions

Lecture sheet – 8

Division by Decimal Numbers:

Divide $7 \div 1.4$

$$\frac{7}{1.4}$$

Here 7 is the numerator and 1.4 is the denominator

Here numerator (7) is the Integer/ whole number and denominator (1.4) is the decimal fraction.

Step 1: We have to change the denominator (1.4) to a whole number ($1.4 \times 10 = 14$)

$$\frac{7}{1.4 \times 10}$$

Step 2: Since we multiply by 10 with the denominator so that we have to multiply by 10 with numerator.

$$\frac{7 \times 10}{1.4 \times 10}$$

$$\frac{70}{14}$$

Then reduce it

$$\frac{70}{14} = 5$$

Ans: 5

Divide:

1. $36 \div 0.6$
2. $40 \div 0.2$
3. $8 \div 0.4$
4. $2 \div 0.125$
5. $5 \div 0.25$

Solution:

     1. $36 \div 0.6$

Here,

$$\frac{36}{0.6} = \frac{36 \times 10}{0.6 \times 10} = \frac{360}{6} = 60$$

     2. $40 \div 0.2$

Here,

$$\frac{40}{0.2} = \frac{40 \times 10}{0.2 \times 10} = \frac{400}{2} = 200$$

     3. $8 \div 0.4$

Here,

$$\frac{8}{0.4} = \frac{8 \times 10}{0.4 \times 10} = \frac{80}{4} = 20$$

     4. $2 \div 0.125$

Here,

$$\frac{2}{0.125} = \frac{2 \times 1000}{0.125 \times 1000} = \frac{2000}{125} = 16$$

     5. $5 \div 0.25$

Here,

$$\frac{5}{0.25} = \frac{5 \times 100}{0.25 \times 100} = \frac{500}{25} = 20$$

1. Exercise (Do yourself):

a) $10 \div 2.5$
b) $48 \div 1.2$
c) $9 \div 1.8$
d) $72 \div 1.2$
e) $12 \div 0.4$
f) $30 \div 0.5$
g) $2 \div 1.6$
h) $3 \div 0.25$
i) $5 \div 0.125$
j) $5 \div 0.25$

Let's Discuss how to calculate number by decimal number:

$$4.65 \div 1.5$$

$1.5 \overline{)4.65}$

Step 1: We have to convert the divisor in an integer/ Whole number. Here 1.5 is the divisor. If we move the decimal point one digit right (1.5) the we'll get a whole number(15).

$1.5 \overline{)4.65}$

Step 2: Since we move the decimal point one digit right in the divisor, so we have to move the decimal point one digit right in the dividend, so that we get, 46.5.

$$1 \underset{\curvearrowright}{.5} \,) \, \overline{4.\underset{\curvearrowright}{65}}$$

$$15 \,) \, \overline{46.5}$$

$$
\begin{array}{r}
3.1 \\
15 \,) \, \overline{46.5} \\
45 \\
\hline
15 \\
15 \\
\hline
0
\end{array}
$$

Put a decimal point at the same place of the quotient as in the dividend

Divide:

1) $2.16 \div 0.24$
2) $4.2 \div 0.6$
3) $0.63 \div 0.9$
4) $0.02 \div 0.05$
5) $0.48 \div 1.2$
6) $9.5 \div 0.38$
7) $3 \div 0.006$
8) $12 \div 0.096$

Solution:

1) $2.16 \div 0.24 = 9$

$$0.2 \underset{\curvearrowright}{4} \,) \, \overline{2.\underset{\curvearrowright}{16}}$$

Rough

$$
\begin{array}{r}
9 \\
24 \,) \, \overline{216} \\
216 \\
\hline
0
\end{array}
$$

2) $4.2 \div 0.6 = 7$

Rough

```
      7
  6 ) 42
     42
      0
```

3) $0.63 \div 0.9 = 0.7$

Rough

```
      0.7
  9 ) 6.3
      0
      6 3
      6 3
        0
```

4) $0.02 \div 0.05 = 0.4$

Rough

```
      0.4
  5 ) 2.0
      0
      2 0
      2 0
        0
```

5) $0.48 \div 12 = 0.4$

Rough

```
       0.4
  12 ) 4.8
       0
       4 8
       4 8
         0
```

6) $9.5 \div 0.38 = 2.5$

Rough

```
        2.5
38 ) 95.0
     76
     190
     190
       0
```

7) $3 \div 0.006 = 500$

Rough

```
       500
6 ) 3000
    30
     0
     0
     0
     0
```

8) $12 \div 0.096 = 125$

Rough

```
         125
96 ) 12000
     96
     240
     192
     480
     480
       0
```

2) Exercise (Do yourself):

a) $1.8 \div 0.9$

b) $3.5 \div 0.7$

c) $0.4 \div 0.5$

d) $0.48 \div 0.6$

e) $4.5 \div 0.05$

f) $0.09 \div 0.03$

g) $4.5 \div 1.5$

h) $10.4 \div 2.6$

i) $6.72 \div 3.2$

j) $36.18 \div 5.4$

k) $8.84 \div 2.6$

l) $9.12 \div 0.06$

m) $16 \div 0.25$

n) $4 \div 0.125$

o) $25.35 \div 6.5$

p) $5.1 \div 0.025$

q) $0.49 \div 0.7$

r) $2.94 \div 0.028$

s) $16.8 \div 0.35$

t) $9 \div 0.012$

Solution

1)

    a) 4
    b) 40
    c) 5
    d) 60
    e) 30
    f) 60
    g) 1.25
    h) 12
    i) 40
    j) 20

2)

    a) 2
    b) 5
    c) 0.8
    d) 0.8
    e) 90
    f) 3
    g) 3
    h) 4
    i) 2.1
    j) 6.7
    k) 3.4
    l) 152
    m) 64
    n) 32
    o) 3.9
    p) 204
    q) 0.7
    r) 105
    s) 48
    t) 750